



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,313	03/14/2002	Max Bachmann	ZAHFRI P420US	1526

20210 7590 06/20/2003

DAVIS & BUJOLD, P.L.L.C.
FOURTH FLOOR
500 N. COMMERCIAL STREET
MANCHESTER, NH 03101-1151

EXAMINER

FISCHMANN, BRYAN R

ART UNIT	PAPER NUMBER
----------	--------------

3618

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/088,313	Applicant(s) BACHMANN
	Examiner Bryan Fischmann	Art Unit 3618
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>		
Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. <ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). 		
Status <p>1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>Mar 14, 2002</u></p> <p>2a) <input type="checkbox"/> This action is FINAL. 2b) <input checked="" type="checkbox"/> This action is non-final.</p> <p>3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11; 453 O.G. 213.</p>		
Disposition of Claims <p>4) <input checked="" type="checkbox"/> Claim(s) <u>16-29</u> is/are pending in the application.</p> <p>4a) Of the above, claim(s) _____ is/are withdrawn from consideration.</p> <p>5) <input type="checkbox"/> Claim(s) _____ is/are allowed.</p> <p>6) <input checked="" type="checkbox"/> Claim(s) <u>16-29</u> is/are rejected.</p> <p>7) <input type="checkbox"/> Claim(s) _____ is/are objected to.</p> <p>8) <input type="checkbox"/> Claims _____ are subject to restriction and/or election requirement.</p>		
Application Papers <p>9) <input checked="" type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10) <input checked="" type="checkbox"/> The drawing(s) filed on <u>Mar 14, 2002</u> is/are a) <input type="checkbox"/> accepted or b) <input checked="" type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p>11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.</p> <p>12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.</p> <p>Priority under 35 U.S.C. §§ 119 and 120</p> <p>13) <input checked="" type="checkbox"/> Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</p> <p>a) <input checked="" type="checkbox"/> All b) <input type="checkbox"/> Some* c) <input type="checkbox"/> None of:</p> <p>1. <input type="checkbox"/> Certified copies of the priority documents have been received.</p> <p>2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.</p> <p>3. <input checked="" type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</p> <p>*See the attached detailed Office action for a list of the certified copies not received.</p> <p>14) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.</p> <p>15) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.</p>		
Attachment(s) <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). <u>2</u></p> <p>4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p>		

Art Unit: 3618

Acknowledgments

1. The Preliminary Amendment (paper 4) filed 3-14-2003 has been entered.

Specification

2. The abstract of the disclosure is objected to because of the following:
 - A) The last four lines of the abstract are considered awkward and somewhat unclear.
3. The disclosure is objected to because of the following:
 - A) The Applicant has not referred to the foreign priority document in the first sentence of the specification, or in an Application Data Sheet. See Section 202.01 of the MPEP and 37 CFR 1.78.
B) The first sentence of the specification does not indicate whether the international application which benefit is being claimed was published under PCT article 21(2) in English. See 37 CFR 1.78(a)(2) and Section 202.01 of the MPEP.
C) The following recited phrases are unclear, awkwardly worded, and/or grammatically incorrect:

Note: The specification, including the abstract, is considered to be replete with awkward, unclear and grammatically incorrect wording. Therefore, a comprehensive listing of all objectionable wording cannot be guaranteed. Examples of wording problems will be given in some cases below in order to assist the Applicant's understanding as to what is considered objectionable, and in other cases, so as not to impose an undue burden on the Examiner to

Art Unit: 3618

explain every instance of objectionable wording, the objectionable lines only will be given without a detailed explanation of what is objectionable. Applicant is requested to thoroughly review the disclosure for all objectionable wording and correct, as appropriate.

- 1) In paragraph 006, there is a space missing between the words "there" and "occurs".
- 2) The recitation of "situated the same" in the middle portion of paragraph 006 is considered awkward.
- 3) The last several lines of paragraph 006 are considered awkward.
- 4) The first few lines of paragraph 010 recites "...it being possible that the wheel rim be also a rim for a single tire...". This recitation is considered awkward and somewhat unclear.
- 5) Line 5 of paragraph 010 recites "...all moved parts of the toothing...". This recited phrase is considered awkward and somewhat unclear.
- 5) Toward the middle of paragraph 010 on page 2, the last letter of the word "reduction" is missing.
- 6) The middle of paragraph 010 on page 2 recites the letter "b".
- 7) The middle and lower portion of paragraph 010 on page 2 contains areas of awkward and unclear wording.

Art Unit: 3618

8) Areas of awkward and unclear wording in paragraph 010 on page 3 are noted.

For example, the middle of page 3 recites "non-turnably situated bearing flange" and "The housing of the drive motor can...be connected with an axial bridge...".

9) Paragraph 013 recites "he figures".

10) Since the drawing descriptions for Figures 1 and 2 on page 4 are identical, it is not clear what the difference is between Figures 1 and 2.

11) Although not strictly objectionable, the description of reference number 6 as "mounting pad" is considered somewhat ambiguous. Is the mounting pad a portion of the motor casing, for example?

12) The recitation of "active load line 7" in paragraph 017 is considered somewhat unclear.

13) The recitation of "The mounting pad 6 can thus be made small in its radial extension" in the middle portion of page 4 is considered awkwardly worded and somewhat unclear.

14) The lower portion of page 4 recites "a wheel bearing 13". Reference number 13 on Figures 1 and 2 appears to be a fastener and not a bearing.

15) The recitation of "The brake disk 15, which is preferably assembled as a divided arrangement" on the upper portion of page 5 is considered unclear.

16) On the fourth line of page 5, the word "the" is misspelled.

Art Unit: 3618

17) The recitation of "...a temperature impairment of the brake disk 15 does not occur" in the upper portion of page 5 is considered awkward.

18) The meaning of the recitation "it is possible to lay out the teeth so that the bearing 17 be free of forces" in the middle of page 5 is considered unclear.

19) The recitation of "The housing 4 of the drive motor 1 is preferably connected with an axle bridge 19 but can also be designed with fastening elements..." in the middle of page 5 is considered unclear.

20) The recitation of "a very compact final drive can be created" in the lower portion of page 5 is considered awkward.

21) The recitation of "0-arrangement" on the lower portion of page 5 is considered unclear.

22) The recitation of "The teeth of the reductions gears 3 and 11 are preferably helical-cut in order to achieve a favorable noise level" towards the bottom of page 5 is considered awkwardly worded and grammatically incorrect (reductions).

23) The meaning of "double-shear supported" in paragraph 018 is considered unclear.

24) The end of paragraph 018 recites "it is also possible to actuate the brake via rods outside the wheel". The meaning of this recited phrase is considered unclear.

Art Unit: 3618

Information Disclosure Statement

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Note that the foreign patent recited in paragraph 006 is not listed on the IDS and therefore has not been considered by the Examiner.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the wheel axle as recited in claim 16, and the winding recess that delivers lubricant as recited in claim 27 must be shown or the features canceled from the claims. No new matter should be entered.

6. It is requested that Applicant clarify in some manner either in the specification or the drawing figures what is the difference between Figures 1 and 2. Except for a few different reference numbers and the two small "round figures" to the right of the drive motor in Figure 1, the drawings appear to be substantially identical. It is also requested that the Applicant identify the purpose, or meaning of these two small round figures to the right of the drive motor (1) on Figure 1, which are not present in Figure 2.

Art Unit: 3618

Claim Objections

7. Claims 16-29 are objected to because of the following:

Note: The claims are considered to be replete with objectionable matter. Therefore, a comprehensive listing of all objectionable matter cannot be guaranteed. Applicant is advised to review all claims for objectionable matter.

A) The recitation of “axial extent” in line 2 of claim 16 is considered awkward and somewhat unclear.

B) While not strictly objectionable, the recitation of “reduction steps” in claim 16 and elsewhere throughout the claims is considered somewhat awkward. Perhaps a term such as “reduction gears”, or “first and second reduction gear sets” would be more appropriate.

C) Claim 16 recites the word “appertaining”. While the word “appertain” is defined in Webster’s Collegiate Dictionary, the variation of this word “appertaining” is not listed in the dictionary. It is requested Applicant verify this word is correctly used.

D) The recitation of “...wherein said reduction steps..are disposed directly adjacent a brake disk is placed between said drive motor...” in claim 16 is considered awkward.

E) The recitation of “the wheel forces is situated in the axial extension” in claim 18 is considered awkward and somewhat unclear, as well as grammatically incorrect (forces is situated).

F) The recitation of “the area of a active load line” in claim 19 is considered grammatically incorrect.

Art Unit: 3618

G) Claim 24 recites "fins (15)". It is believed from page 7 of the specification that the term "fins" is associated with reference number 16.

H) The claim 26 recitation "a non-rotatably retained hub carrier" is considered awkward and somewhat unclear.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 16-29 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicants regard as their invention.

Note: The claims are considered to be replete with unclear matter. Therefore, a comprehensive listing of all unclear matter cannot be guaranteed. Applicant is advised to review all claims for unclear matter.

A) Claim 16 recites "...the axial extension of said drive motor...being limited by the brake disc and an actuation mechanism...of said brake". The meaning of this recited phrase is considered unclear.

B) Claims 17 and 18 recite "a wheel bearing for absorbing the wheel forces". Since the bearings are best understood to be ball or roller bearings, which are constructed of metal, it is

Art Unit: 3618

considered unclear how these bearings "absorb forces". It would seem that forces are "absorbed" where there is "resiliency" in an object, such as a rubber tire.

C) Claim 20 recites the limitation "the radial forces". There is insufficient antecedent basis for this limitation in the claim.

D) Claim 21 recites "...said drive motor...is an electromotor with an active length similar to the diameter of the air gap". The meaning of this recited phrase, particularly the term "active length" is considered unclear.

E) Claim 22 recites the limitation "the radial extension of the brake disk". There is insufficient antecedent basis for this limitation in the claim.

F) Claim 23 recites "wherein a non-rotatably retained part... of a second of the reduction steps...". The meaning of this recited phrase, as well as most, if not all of claim 23 is considered unclear. Note that the nomenclature recited in claim 23, such as "non-rotatably retained part" is not consistent with the nomenclature recited on page 7 of the specification.

G) The structure being referred to by the recitation of "winding recess...which delivers lubricant.." in claim 27 is considered unclear. Note that the term "winding recess" does not correlate to nomenclature listed on page 7 of the specification, and is not considered to be obvious from the drawings, or how "lubricant" is "delivered" from this recess.

H) In claim 28 it is considered unclear what structure is being referred to by the recitation of "intermediate wheels". Note that this term does not correspond to nomenclature listed on page 7 of the specification and is not considered to be obvious from the drawing figures.

Art Unit: 3618

- I) The recitation of "said ring gear" in claim 28 lacks antecedent basis.
- J) In claim 29, the meaning of the recitation "skewed bearing in 0-arrangement" is considered unclear.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) a patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 16-29, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker, US Patent 2,039,513.

Baker teaches a final drive to a vehicle wheel (Figure 1) having a drive motor (10) which is not axially aligned with the wheel axis (Figure 1) and which via reduction gears (16 and 18) drives a wheel, which can be braked by a braking disc (29 - see comments below) situated within (radially) a wheel rim of the wheel, where the reduction gears are adjacent the brake disc (Figure 1) and the brake disc is placed between (at least radially) the motor and the reduction gears (Figure 1).

Baker fails to explicitly state that there is an "actuation mechanism" to actuate the brakes.

However, all brakes require a "actuation mechanism" to actuate the brakes. The

Art Unit: 3618

Examiner takes Official Notice that wheel brakes are commonly supplied with a wheel cylinder which contains a piston that moves in response to a change in hydraulic pressure in order to apply the brakes. This may be seen in virtually any vehicle on the road. An actuation mechanism is necessary to cause the brakes to be applied.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the brakes of Baker would include an actuation mechanism.

Regarding the recitation of “braking disc” in claim 29, it is noted that Baker describes reference number 29 as a “brake drum”. However, Webster’s Collegiate Dictionary defines “disc” as: “a variation of disk” and “disk” as: “a thin circular object”. Note that this definition is consistent with reference number 29 of Baker, as the diameter of reference number 29 is substantially greater than the “thickness”.

Regarding claim 17 and 18 note bearings shown on Figure 1.

Regarding claim 19, note that the motor is “mounted” by reference number 22 which extends into a “load line” of the wheel.

Regarding claim 20, note that the drive motor will be subjected to radial forces.

Regarding claim 21, Baker fails to explicitly state that there is an air gap within the motor. However, it would have been obvious to one of ordinary skill in the art that an air gap between the stator and rotor of the motor is required to allow relative movement between the stationary stator and rotating rotor. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the motor of Baker would have an air gap.

Art Unit: 3618

Regarding claim 22, see reference number 14.

Regarding claim 23, see reference number 22.

Regarding claim 24, the Examiner takes Official Notice that cooling fins are well known in the art. Cooling fins facilitate heat transfer. Therefore, it would have been obvious to one of ordinary skill in the art to utilize cooling fins to cool the brake, which generates heat.

Regarding claim 25, see lines 54 and 55 of page 1 of Baker.

Regarding claim 26, see reference numbers 14, 16 and 18.

Regarding claim 27, the motion of the motor will facilitate lubricant circulation.

Regarding claim 28, as best understood, see reference numbers 16, 18, 19 and 28.

Regarding claim 29, note that the bearings in Figure 1 resemble a "0", since they are round.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- A) Baker - teaches motor driven wheel
- B) Rockwell, et al - teaches motor driven wheel
- C) Hapeman, et al - teaches motor driven wheel
- D) Myers - teaches motor driven wheel
- E) Gruich, et al - teaches motor driven wheel

Art Unit: 3618

- F) Love, et al - teaches motor driven wheel
- G) Hirose, et al - teaches motor driven wheel
- H) Kawamoto, et al - teaches motor driven wheel
- I) Toida, et al - teaches motor driven wheel
- J) Vanjani - teaches motor driven wheel
- K) Nieman, et al - teaches motor driven wheel
- L) Wendl, et al - Patent by Applicant
- M) Kima, e al - teaches motor driven wheel
- N) British Patent 2132362 - teaches motor driven wheel

13. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bryan Fischmann whose telephone number is (703) 306-5955. The examiner can normally be reached on Monday through Friday from 7:30 to 4:00.

If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, Brian Johnson, can be reached on (703) 308-0885. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687.

Art Unit: 3618

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.



BRYAN FISCHMANN
PATENT EXAMINER